

No. 672,835.

Patented Apr. 23, 1901.

F. F. FLAGG.
BALL COCK.

(Application filed Oct. 2, 1900.)

(No Model.)

Fig. 1.

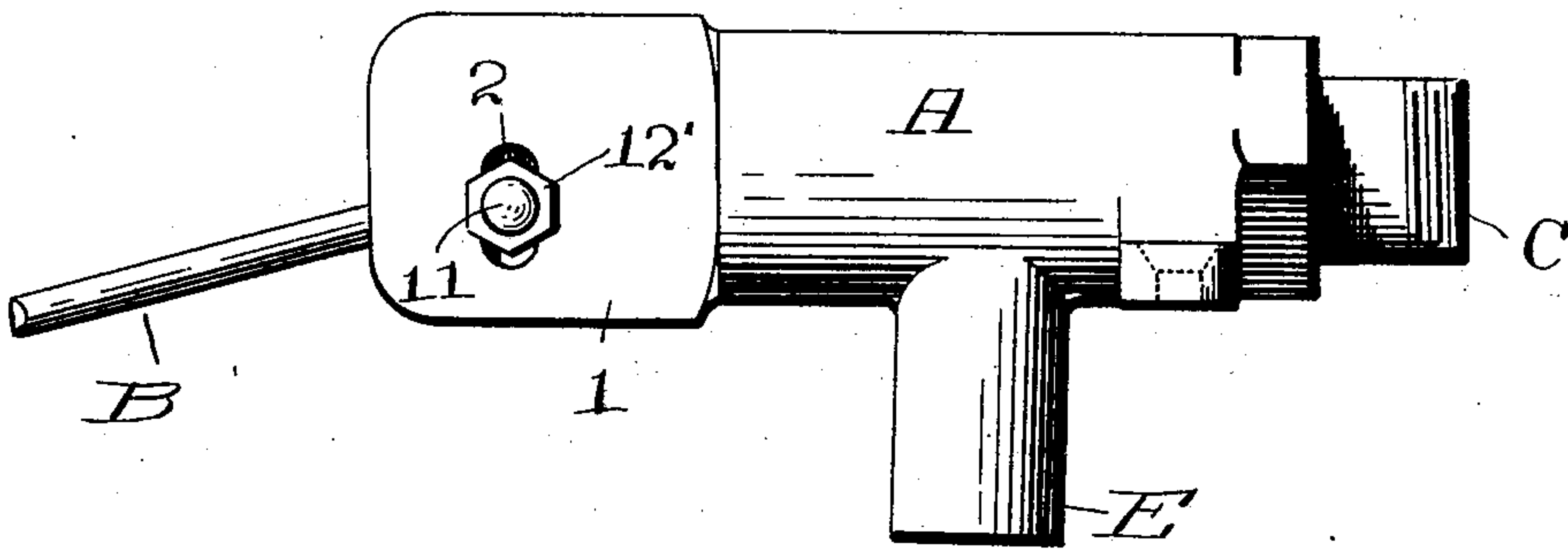


Fig. 2.

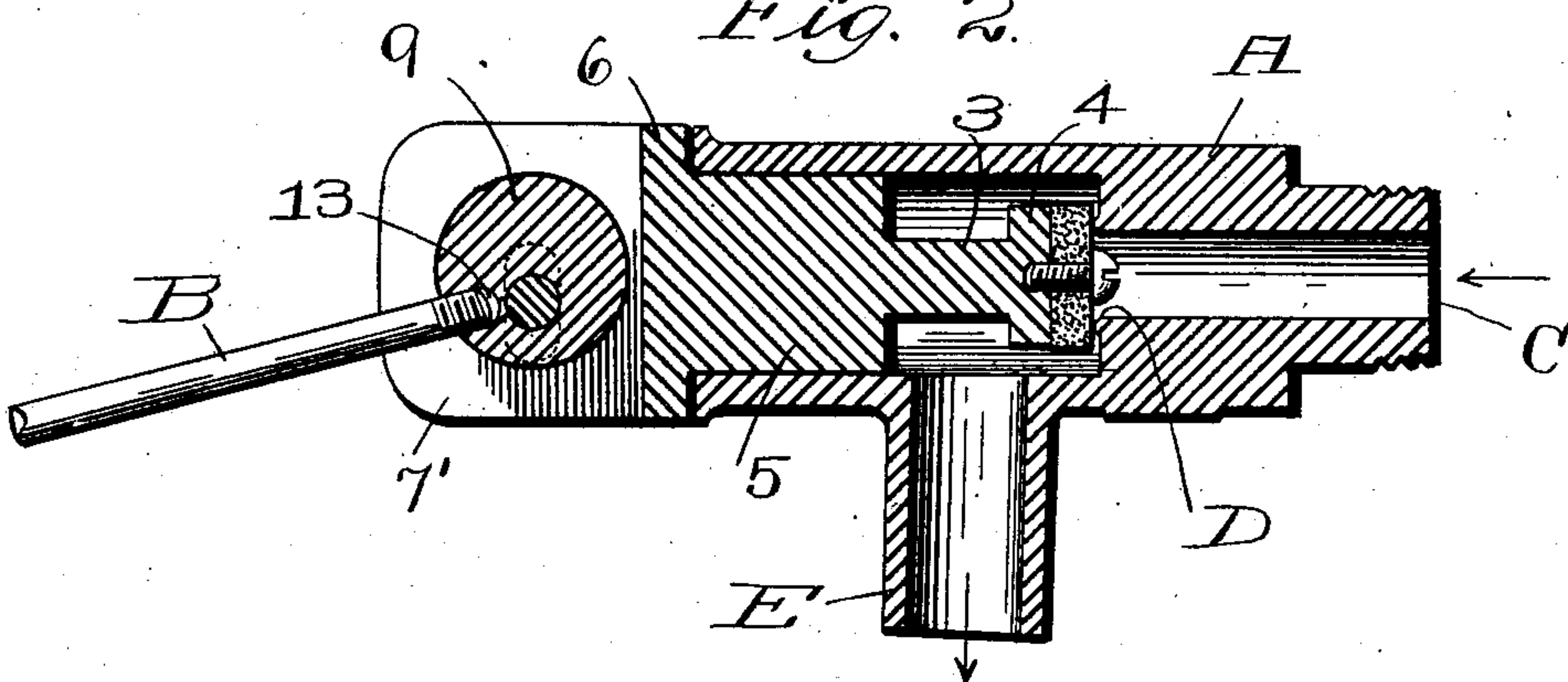
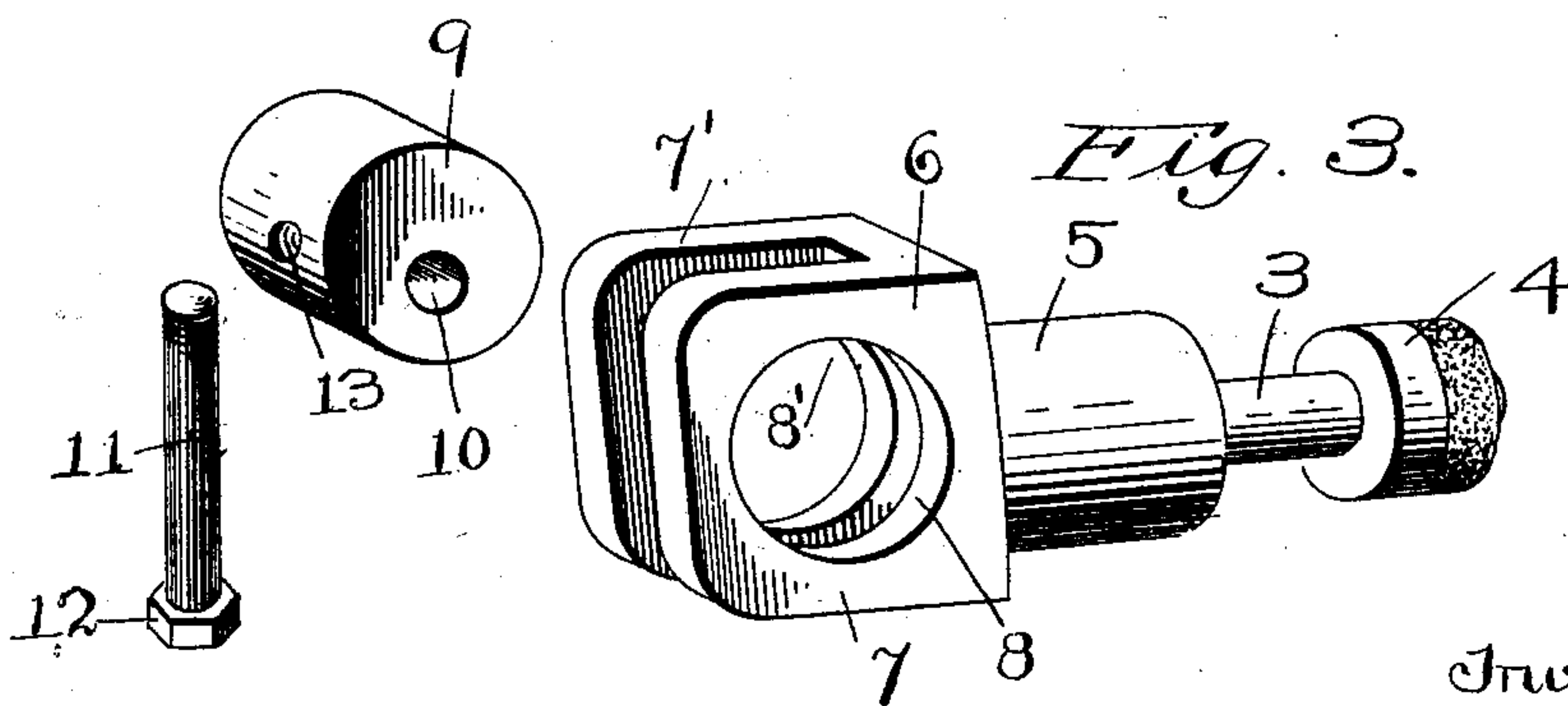


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

FRED F. FLAGG, OF WORCESTER, MASSACHUSETTS.

BALL-COCK.

SPECIFICATION forming part of Letters Patent No. 672,835, dated April 23, 1901.

Application filed October 2, 1900. Serial No. 31,776. (No model.)

To all whom it may concern:

Be it known that I, FRED F. FLAGG, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Ball-Cocks, of which the following is a specification.

This invention relates particularly to float-controlled valves for opening an orifice which supplies a tank with water when the accumulation of water in the tank falls below a certain level and for permitting the valve to close the orifice when the water again rises to said level.

My improvement to be described may be applied to valves or faucets which are operated by hand or by means other than a float. This device is very applicable wherever a full flow is desired after a quick movement of the handle.

This improvement has for its object to provide a strong simple appliance in which the valve is positively controlled at all times and adapted to be easily opened against any pressure.

In the drawings, Figure 1 is a side view; Fig. 2, a longitudinal section; Fig. 3, a perspective of certain parts.

The same letters and numerals of reference indicate the same parts in all the figures.

A represents the casing, connected at its inlet end with the supply-pipe C, furnished with a valve-seat D. The discharge-pipe for conducting water to the tank is shown at E. The valve-casing at one end is bifurcated to form the bearing-plates 1, each of which is provided with a slot 2. These slots are at precisely right angles to the axis of the valve-casing. Working in the valve-casing is a valve 3, provided with a head 4, adapted to engage the seat D. The intermediate portion 5 of the valve is so fitted to engage the inner part of the valve-casing that no water can escape through. The valve terminates in a shouldered head 6, bifurcated to provide the two end pieces 7 7'. These end pieces 7 7' are bored to provide circular orifices 8 8'. A cylindrically-shaped bar 9 of metal is held in the orifices loosely relatively to the head. I prefer to designate this part 9 as the "actuator." The actuator is bored, as shown by 10, at a suitable distance from its axial center. Pass-

ing through 10 is a bolt 11, provided with nuts 12 12'. This bolt is not secured to the actuator in any manner, merely passing through the hole and the slots 2 in the valve-casing. A float is secured to the actuator by a rod B at 13, which should be the center of the actuator, so that all thrusts and strains arising from the movements of the float will act at the center. When the water falls in the tank below a given level, the responsive movement of the float acting upon 9 turns the actuator. The rolling motion of the actuator causes the shouldered head 6 to slide back and the flow of water into the tank to begin. The eccentric position of the bolt 11 gives rise to two forces—a horizontal one and a vertical one. The horizontal force operates the valve as described. The vertical one is taken care of by the sliding bolt, which rides up and down the slots 2 freely. If these slots were reduced to holes the diameter of the bolt, it is clear the device could not operate. The only movement of the actuator is a rotary one. It cannot move horizontally, being held by the bolt. All vertical movement is prevented, since the actuator is fitted in the end pieces, which are incapable of such a movement. By this arrangement of parts the wear upon the actuator is slight, because of the complete absence of sliding friction. The actuator rolls in its bearings to exert its impelling motion to open or close the valve.

It is known to be old for inventors to employ a cam-disk to open and close a valve; but in all such cases, so far as I am aware, the cam-disk is rigid with a shaft, swinging about as the shaft is manipulated. The result in such cases is rapid wear of the cam or its bearings. The valve instead of being driven true upon its seat is subjected to a side strain, and leakage is the result.

In my invention the location of the actuator precludes any side movement. Moreover, the valve is positively drawn back as well as propelled forward.

What I claim as my invention is—

1. In a ball-cock, the combination of a valve-casing provided with slotted bearing-plates, a valve reciprocating within said casing and having its head bifurcated to provide end pieces, an actuator loosely held by said end pieces, a bolt loosely passing through an ec-

centrically-placed hole in the actuator and adapted to be received in said slotted bearing-plates and means secured to the actuator to operate the device, substantially as set forth.

5 2. In a ball-cock, the combination of a valve-casing, bearing-plates provided with slots, a valve in said casing, the head of said valve having end pieces provided with orifices, an
10 actuator loosely held in said end pieces and bored eccentrically, a bolt passing loosely through the eccentric bore of said actuator

and through the slots of the bearing-plates, said bolt adapted to ride up and down in said slots to permit the rotary movement of said actuator, means to operate the actuator, substantially as described. 15

In testimony whereof I have affixed my signature in presence of two witnesses.

FRED F. FLAGG.

Witnesses:

JOSEPH H. LYDEN,

M. J. LYDEN.